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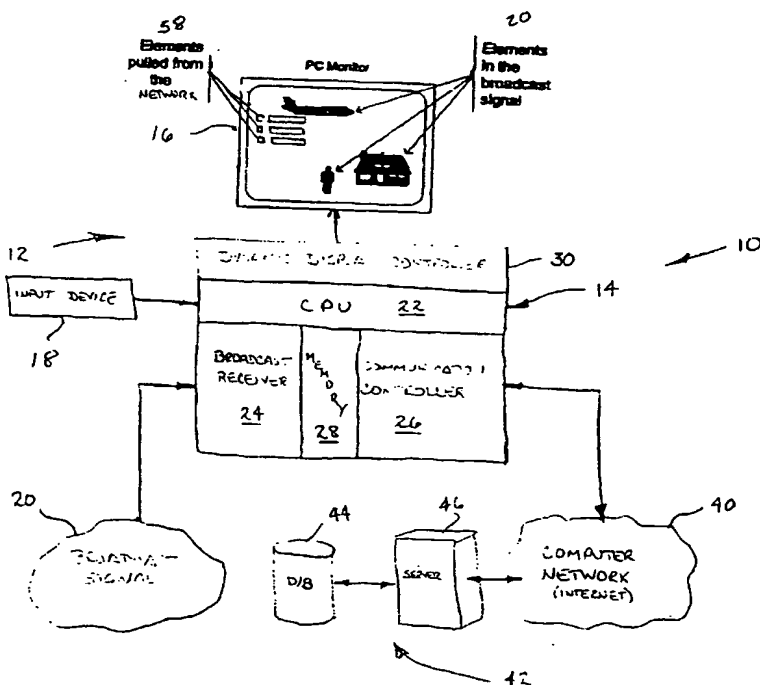
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(54) Title: SYSTEM AND METHOD OF PROVIDING RELEVANT INTERACTIVE CONTENT TO A BROADCAST DISPLAY



(57) Abstract: A system and method (10) of displaying interactive content (58) relevant to a broadcast presentation (20) on a viewer display (16) associated with a viewer device. The method begins with the receipt, at the viewer device (16), of a broadcast presentation from a broadcast presentation provider. Next, the viewer device receives relevant interactive content (58) from a source (44) of interactive content, filtered and characterized for a specific user. This additional content is bound to the broadcast content only by nature of a relevancy mapping. As such, it may be presented to the user without the broadcast content providers direct assistance. The viewer device (16) merges the broadcast presentation (20) and the relevant interactive content (58) and displays both the broadcast presentation and the relevant interactive content on a viewer display (16). Preferably, the viewer device (16) accesses the source (44) of relevant interactive content over a computer network (40), such as the Internet.

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SYSTEM AND METHOD OF PROVIDING RELEVANT INTERACTIVE  
CONTENT TO A BROADCAST DISPLAY

FIELD OF THE INVENTION

The present invention relates generally to a system and method of providing interactive content to a broadcast program display to enhance the viewing experience of a viewer of the broadcast program. More particularly, the present invention concerns determining the nature of a broadcast program being viewed by a user and the location of the person viewing the broadcast content, in order to access a source of interactive content over a computer network, perform a search of the interactive content source while applying rules affecting the search to retrieve any interactive content associated with the broadcast program being viewed by the user, and to coordinate transmission of any retrieved interactive content to the viewer and display of the interactive content on a viewer display under the control of the viewer.

BACKGROUND OF THE INVENTION

Prior art systems are known which integrate television broadcasts with other video or audio content such as a stream of data broadcast over the internet. Although such merged displays may be interactive, they require action on the part of the broadcast program provider and cannot be dynamically created and controlled by alternate uncoordinated content providers or a community of viewers or an individual viewer of a broadcast program.

SUMMARY OF THE INVENTION

Accordingly, the present invention provides a system and method of displaying interactive content relevant to a broadcast presentation on a viewer display associated with a viewer device. The method begins with the receipt, at the

viewer device, of a broadcast presentation from a broadcast presentation provider. Next, the viewer device receives relevant interactive content from a source of interactive content, filtered and characterized for a specific user.

5 This additional content is bound to the broadcast content only by nature of a relevancy mapping. As such, it may be presented to the user without the broadcast content providers direct assistance, intervention or even knowledge.

10 The viewer device merges the broadcast presentation and the filtered and characterized relevant interactive content and displays both the broadcast presentation and the relevant interactive content on a viewer display. Preferably, the viewer device accesses the source of relevant interactive content over a computer network, such as the Internet.

15 The method of searching and retrieving identified interactive content relevant to said identified broadcast presentation utilizes a dynamically programmable and interdependent rule system including at least one rule from a group including, for example, a rule limiting content to specific broadcast programming; a rule limiting content to authorized users; a rule limiting content to user affinity with an identified group of authorized users; a rule limiting content to a specific geographical location; and a rule limiting content to broadcaster permission. The dynamically  
20 programmable and interdependent rule system typically would  
25 operate automatically without user or viewer intervention.

#### DESCRIPTION OF THE DRAWINGS

The present invention will be better understood by reading the following detailed description, taken together  
30 with the drawings wherein:

FIG. 1 is a schematic diagram of one exemplary system

embodying the principles of the present invention, wherein a viewer of a broadcast program accesses a source of interactive information associated with the broadcast program over a computer network;

5       FIG. 2 is diagram showing the multiple layers that are displayed on a viewer display device;

FIG. 3 shows a converged display including the multiple layers of FIG. 2, including a background layer for displaying a broadcast program and an interactive content overlay layer;

10       FIG. 4 shows an alternative display strategy for windowing multiple sources of information on a display device; and

FIG. 5 is a flow chart of one exemplary method of providing interactive content to a broadcast program.

15       DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A system 10, FIG. 1, on which the present invention can be utilized and which embodies the present invention, includes a multi-media presentation system 12 maintained by a system user. (The term user and viewer will be used interchangeably  
20 in the remainder of this description and should be construed to mean a person who perceives a broadcast presentation using his or her senses, including but not limited to sight and/or hearing.) The term multi-media presentation system is used herein to indicate a system capable of presenting audio with  
25 or without video information to a user. However, the presentation of more than one media should not be construed as a limitation of the present invention. Examples of such multi-media presentation systems 12 include personal computer (PC) systems, PC televisions (PCTVs), televisions used in  
30 combination with set-top boxes, and the like.

Each multi-media presentation system or workstation 12

includes a viewer computer 14 and at least one viewer display device 16, such as a computer monitor or television set. Each multi-media presentation system 12 also includes at least one input device 18, such as a keyboard, mouse, digitizer pad, writing pad, microphone, camera or other pointing or input generating device which allows the user to provide user input the workstations 12.

As will be described more fully below, each multi-media presentation system 12 is adapted to receive at least one broadcast presentation signal 20, which may be provided in the form of broadcast television programming (including standard broadcast television received with an antenna, cable and satellite television), closed circuit television, Internet web-TV or a broadcast like signal received from a device such as a storage device (hard drive, DVD, CD ROM), cassette tape, VCR tape or the like, received by means of a standard television broadcast signal over the air waves, cable television or satellite television, utilizing a tuner or other method in each viewer computer 14.

In addition, in one preferred embodiment, each multi-media presentation system 12 interfaces with a computer network 40, which may be provided in the form of a local area network (LAN), a wide area network (WAN), a telephone (wireless) network or a global computer network, such as the Internet running a communication protocol such as Internet Protocol (IP).

The heart of the multi-media presentation system 12 is the viewer computer 14. Each viewer computer 14 includes a central processing unit (CPU) 22, which controls the functions of the presentation system. The CPU 22 interfaces a broadcast receiver 24, which is associated with the viewer computer 14. The broadcast receiver 24 receives, as its input, the

broadcast program signal 20. In one embodiment, the broadcast receiver 24 is a broadcast channel tuner that receives broadcast signals from a source such as a television broadcasting station or other programming provider or source.

5 In another embodiment, the broadcast receiver 28 is a PC tuner card included in the viewer computer, which provides television functionality to the viewer computer 14. In another embodiment, the broadcast receiver is an IP enabled device (such as a cable modem) attached or integrated with the  
10 viewer computer 14.

Each viewer computer 14 also includes a communication controller 26 to control inputs received from, and outputs transmitted to, the computer network 40. In one preferred embodiment, the communications controller 26 may include a  
15 device such as a modem (for example, a telephone or cable modem) or a network interface card that receives information from a local or wide area network.

Each viewer computer 14 may also include internal storage 28, such as memory, disk drive, CD-Rom, tape or the like,  
20 where information relevant to a displayed broadcast presentation may be stored.

A dynamic display controller 30 (also known as a broadcast browser) is also provided with each viewer computer 14. The dynamic display controller 30 interfaces the CPU 22,  
25 broadcast receiver 24 and communications controller 26 and system storage 28 and receives, as input, a broadcast presentation in the form of broadcast signal 20, information stored in system storage 28 and additional information from the computer network 40 (via the communication controller 26).  
30 The dynamic display controller 30 merges the multiple input signals and outputs a merged data signal to the display device 16.

In the preferred embodiment of the present invention, which is disclosed for illustrative purposes only and not considered a limitation of the present invention, the dynamic display controller 30 is implemented as computer software in the form of a browser user interface operating on the viewer computer 14, which is a personal computer or individual computer workstation.

Each multi-media presentation system 12 also includes at least one input device 18, which allows a viewer to provide input to the dynamic display controller 30, which will be explained in greater detail below.

In the exemplary embodiment of FIG. 1, a source of interactive content 42 is accessible to the multi-media presentation system 12 via the computer network 40. In the illustrative example, the source of interactive content 42 includes an interactive content database 44 that is controlled by a remote, interactive content server 46. In this embodiment, when a viewer is viewing a broadcast presentation 20 on his or her display device 16, he or she may also, simultaneously, view interactive content that is relevant to the broadcast presentation 20 being viewed.

In order to ensure that the interactive content is, in fact, relevant to the broadcast presentation, information identifying and characterizing the broadcast presentation must be provided to the interactive content server 46. The present invention contemplates a number of means by which such identifying and characterizing information can be provided to the interactive content server. For example, a viewer may provide identifying information to his or her viewer computer 14 using input device 20.

Alternatively, the CPU 22 querying the broadcast receiver 24 to identify the source of the broadcast signal 20 being

viewed may identify the broadcast presentation being viewed. The CPU may then determine from the date and time, that the particular broadcast presentation 20 is being viewed and the source of the broadcast, including the identity of the broadcast presentation. In another example, a location of the viewer's computer, coupled with the date, time and received channel can be used to identify the broadcast presentation being viewed. Location information can be obtained by, for example, a zip code input provided by the viewer to the viewer computer via input device 18, a GPS receiver attached to the viewer computer, or a local transmitter identifier such as could be provided by a cell phone network transmitter.

Once the broadcast presentation is identified, an identifier is provided to the source of interactive content, such as the interactive content database 44 via the interactive content server 46 and computer network 40. When the interactive content server 46 receives the identifying information for the broadcast presentation being viewed, it will search the interactive content database 44 while applying rules affecting the search and retrieve any interactive content that is relevant to the identified broadcast presentation.

In the embodiment of FIG. 1, the source of interactive content is accessed over a computer network and preferably, the Internet. Thus, any viewer computer that is capable of transmitting and receiving information in hypertext transfer protocol (http) can access the source of interactive content 42 over the Internet. Though the http protocol is used for illustrative purposes, the usage of alternate protocols, including protocols not yet developed, is envisioned in future embodiments and considered within the scope of the present invention.



Once retrieved, filtered and characterized for the particular user, the relevant interactive content is then provided, from the interactive content source 42, to the viewer computer 14, where the communication controller 26  
5 receives it. The dynamic display controller 30 thereafter merges the received relevant interactive content with the broadcast presentation and displays both on the viewer display 16.

FIGS. 2 and 3 show an example of one display strategy  
10 that may be utilized by the dynamic display controller 30. Such a layering or "overlay" strategy may utilized by the dynamic display controller 30 to control the display of the broadcast presentation and the filtered and characterized relevant interactive content so that all of the data may be  
15 displayed in a single window or screen on each display device 16 for a given user or viewer.

The dynamic display controller 30 displays the broadcast presentation in a "background" layer 50. Next, an overlay is displayed in the same window in at least one additional layer  
20 54 on top of the background layer 50. (It is understood that the order or layers can be reversed, if desired.) In order to allow the broadcast signal in the background layer 50 to be visible through the second layer 54, the second layer utilizes a substantially transparent background 56 or, as is disclosed  
25 herein, a background referred to by name as "broadcast" to signify the source of the background information.

In one embodiment, the dynamic display controller 30 may automatically display, in at least one of the additional layers 54, the filtered and characterized relevant interactive  
30 content 58 that it received from the interactive content source 42, in this example over computer network 40. Examples of interactive content include additional information

regarding a product being displayed in the broadcast presentation, information regarding characters or actors or actresses appearing in the broadcast presentation and the like, all such content filtered and targeted for the particular viewer based on various criteria, as set forth above.

Relevant interactive content 58 could also include information allowing a viewer of the broadcast presentation to affect a purchase of an item that is being displayed in the broadcast presentation. In such a case, in addition to providing the relevant interactive content, input can be solicited from the viewer in one or more viewer input window 62 (FIG. 4).

In another embodiment, an interactive content icon 60 may also be provided and will appear when interactive content is available to allow a viewer to control when and if relevant interactive content is to be displayed on his or her display device 16 during a broadcast presentation. Thus if a viewer wishes to enhance his or her viewing experience, he or she can activate the display of relevant interactive content by selecting the interactive content icon 62. Conversely, if a viewer believes that interactive content would hinder his or her viewing experience, he or she can prohibit the display of interactive content by de-selecting the interactive content icon 62.

The embodiment of FIG. 4 utilizes a different display strategy than the embodiment of FIG. 3. In this embodiment, instead of using a layered display strategy, a windowed strategy is used. In the windowed strategy, the dynamic display controller displays the broadcast presentation 20 in a first window 64. Any retrieved relevant interactive content

is then displayed in at least one additional window 66. Of course, multiple additional windows may be utilized.

For example, a first additional window may be provided to provide relevant interactive content about a product or service. The first additional window may have user-selectable icons that could trigger the display of a second or subsequent additional window if additional information or interaction between the viewer and the interactive content source is desired, such as, for example if a viewer wishes to purchase a product or service. Of course, each window may be sized and positioned in order to optimize the display of all of the information on the display device.

A method 100 of displaying interactive content relevant to a broadcast presentation on a viewer display is shown in FIG. 5. In order to utilize the method, a viewer will have a viewer computer that is capable of receiving a broadcast presentation. For example, a viewer may have a personal computer, PC TV or a set-top box associated with his or her television. Each viewer computer will include a display controller for controlling a display device and, in the preferred embodiment, a communication controller for interfacing the viewer computer with a source of interactive content over a computer network. However, the invention contemplates the use of other sources of interactive content, including a database that is included in storage of the viewer computer, in which case, a communication controller would not be required.

The method 100 begins by receiving a broadcast presentation at the viewer computer, act 110. Next, in act 120, relevant interactive content is also provided to the viewer computer. Then, in act 130, the broadcast presentation

and interactive content are merged by a dynamic display controller and are displayed on a display device.

In the preferred embodiment, the viewer computer accesses a remote source of interactive content over a computer  
5 network. Since the source of interactive content is envisioned to be made available to any viewer computer that can access the computer network, a method of ensuring that only interactive content that is relevant to the broadcast presentation and appropriate to the user is provided to the  
10 viewer computer for display. To ensure that only relevant interactive content is displayed, the broadcast presentation must first be identified, act 122. For example a viewer may simply provide information to his or her viewer computer identifying the broadcast presentation.

15 Alternatively, the viewer computer can automatically or semi-automatically identify the broadcast presentation being viewed by monitoring the source of the broadcast presentation (e.g. television channel being viewed) along with the date, time and geographic location of the viewer (e.g. using zip  
20 code or other geographically specific information previously entered/stored or dynamically determined on the viewer's display system). In the case of cable television broadcasting, viewing date, time and cable provider may provide sufficient information to identify the broadcast  
25 presentation.

Once the broadcast presentation is identified, then, in act 124, a source of interactive content is searched to identify any interactive content relevant to the broadcast presentation. If relevant interactive content is identified,  
30 then it is retrieved from the interactive content source and transmitted to the viewer computer, act 126, preferably over a computer network, such as the Internet.

The method 100 optionally allows for viewer interaction with the interactive content, act 140, by, for example providing information to the interactive content source using one or more input device. Any input information would then be  
5 transmitted to the interactive content source over the computer network.

Accordingly, the disclosed invention provides a system and method of providing and displaying, on a viewer's display device, interactive content that is specifically relevant to a  
10 broadcast presentation and to a particular viewer.

Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention, which is not to be limited except by the claims that follow.

15 What is claimed is:

1. A system for providing interactive content to a broadcast presentation being displayed on a viewer display associated with a viewer device, said system comprising:

5 a broadcast receiver associated with said viewer device, said broadcast receiver receiving a broadcast presentation from a broadcast presentation provider;

10 a communication controller associated with said viewer device, said communication controller receiving interactive content associated with said received broadcast presentation from a source of interactive content; and

15 a dynamic display controller associated with said viewer computer, said dynamic display controller responsive to said received broadcast presentation and said received interactive content, for displaying said broadcast presentation and said interactive content on a viewer display.

2. The system of claim 1, wherein said viewer display comprises a single-window layered display having:

20 a broadcast layer, for displaying said broadcast presentation in a background layer of said layered display; and

25 at least one overlay displayed in at least a second layer of said layered display on top of said broadcast layer on said single-window, layered display, said at least one overlay including said interactive content and having a substantially transparent background and allowing said broadcast presentation in said broadcast layer to be viewed through said at least one overlay.

3. The system of claim 1, wherein said source of interactive content comprises an interactive content server

and at least one interactive content database, accessible over a computer network, and wherein said communication controller comprises a network controller.

4. The system of claim 3, wherein said computer  
5 network comprises a local area network (LAN)

5. The system of claim 3, wherein said computer network comprises a wide area network (WAN).

6. The system of claim 5, wherein said WAN comprises the Internet.

10 7. The system of claim 3, further comprising a broadcast presentation identifier identifying said broadcast presentation and a relevancy processor for identifying interactive content relevant to said identified broadcast presentation stored in said at least one interactive content  
15 database.

8. The system of claim 2 further comprising a viewer-selectable interactive content icon displayed on said at least one overlay, to allow a viewer to control the display of interactive content on said at least one  
20 overlay.

9. The system of claim 1, further comprising at least one input device for allowing a viewer of said broadcast presentation and interactive content to interact with said interactive content.

25 10. The system of claim 1, wherein said viewer display

comprises a multi-window display having:

a first window, displaying said broadcast presentation;  
and

5 at least one additional window displaying said  
interactive content.



11. A method of displaying interactive content relevant to a broadcast presentation and relevant to a viewer on a viewer display associated with a viewer device, said method comprising the acts of:

- 5 receiving, at said viewer device, a broadcast presentation from a broadcast presentation provider;  
receiving, at said viewer device, relevant interactive content from a source of interactive content; and  
merging and displaying said retrieved broadcast  
10 presentation and relevant interactive content on a viewer display device.

12. The method of claim 11, wherein said act of receiving relevant interactive content comprises:

- 15 identifying said broadcast presentation received at said viewer device;  
identifying at least one characteristic about said viewer;  
responsive to identifying said broadcast presentation and identifying at least one characteristic about said  
20 viewer, searching a database of interactive content to identify any interactive content relevant to said identified broadcast presentation and to said at least one characteristic about said viewer; and  
retrieving said identified relevant interactive content.

25 13. The method of claim 11, wherein said act of receiving relevant interactive content comprises:

- identifying said broadcast presentation received at said viewer device;  
identifying at least one characteristic about said  
30 viewer;

accessing a remote database of interactive content over a computer network;

searching a database of interactive content to identify any interactive content relevant to said identified broadcast presentation and to said at least one characteristic about  
5 said viewer; and

transmitting said relevant interactive content to said viewer device over said computer network.

14. The method of claim 13, wherein said acts of  
10 accessing said remote database of interactive content and transmitting said relevant interactive content over a computer network comprises accessing said remote database and transmitting said relevant interactive content over the Internet.

15 15. The method of claim 11, wherein said act of merging and displaying said retrieved broadcast presentation and relevant interactive content on said viewer display device comprises displaying said broadcast presentation and said relevant interactive content on a single-window layered  
20 display wherein:

said broadcast presentation is displayed in a broadcast layer, said broadcast layer being a background layer of said layered display; and

said relevant interactive content is displayed in at  
25 least one overlay in at least a second layer of said layered display on top of said broadcast layer on said single-window, layered display, said at least one overlay having a substantially transparent background and allowing said broadcast presentation in said  
30 broadcast layer to be viewed through said at least one

overlay..

16. The method of claim 11, wherein said act of merging and displaying said retrieved broadcast presentation and relevant interactive content on said viewer display device  
5 comprises displaying said broadcast presentation and said relevant interactive content on a multi-window display wherein:

said broadcast presentation is displayed in a first window of said multi-window display; and  
10 said relevant interactive content is displayed in at least one additional window of said multi-window display.

17. The method of claim 12, wherein said act of identifying said broadcast presentation received at said  
15 viewer device comprises receiving a viewer input containing an identifier for said received broadcast presentation.

18. The method of claim 12, wherein said act of identifying said broadcast presentation received at said viewer device comprises identifying said source of said  
20 received broadcast presentation, determining a date and time of receipt of said broadcast presentation and searching a schedule of broadcast presentations.

19. The method of claim 12, wherein said act of identifying said broadcast presentation received at said  
25 viewer device comprises identifying attributes of said broadcast presentation received at said viewer device, said attributes including a geographic location of said viewer device, a date and time of receipt of said broadcast

presentation, and searching a database of broadcast presentations to identify a broadcast presentation corresponding to the attributes identified for said broadcast presentation received at said viewer device.

- 5 The method of claim 19, wherein said act of identifying a geographic location of said viewer device comprises inputting, at said viewer device a zip code associated with a location of said viewer device.
- 10 The method of claim 12, wherein said acts of searching and retrieving said identified interactive content relevant to said identified broadcast presentation utilizes a dynamically programmable and interdependent rule system including at least one rule selected from the group consisting of:
- 15 a rule limiting content to specific broadcast programming;  
a rule limiting content to authorized users;  
a rule limiting content to user affinity with an identified group of authorized users;
- 20 a rule limiting content to a specific geographical location; and  
a rule limiting content to broadcaster permission.
22. The method of claim 21, wherein said dynamically programmable and interdependent rule system operates
- 25 automatically.

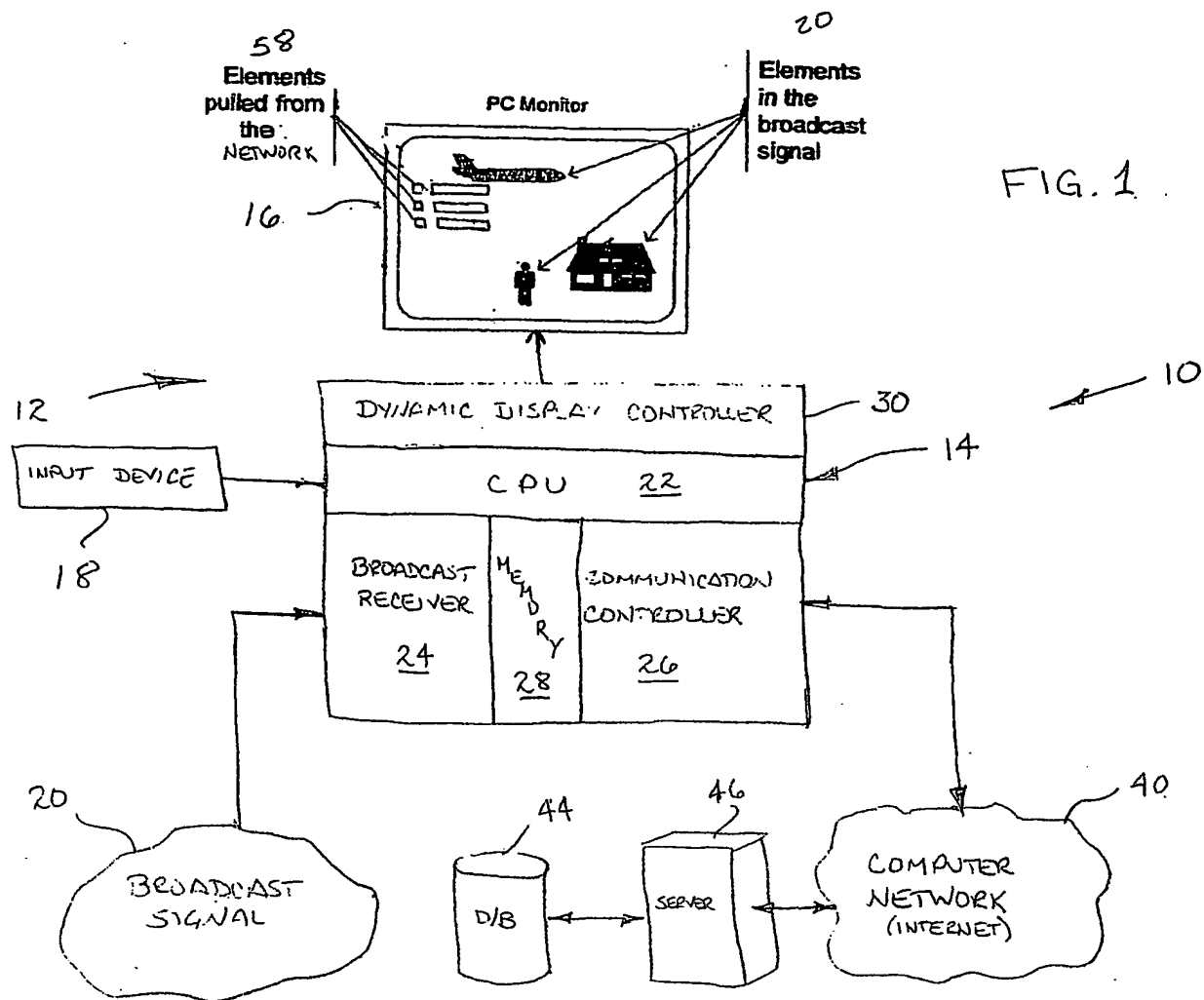


FIG. 2

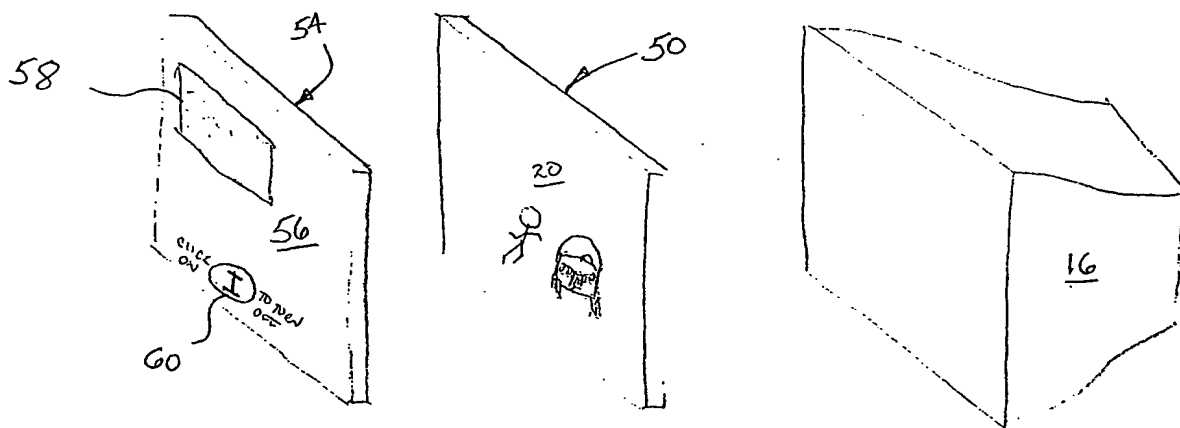


FIG. 3

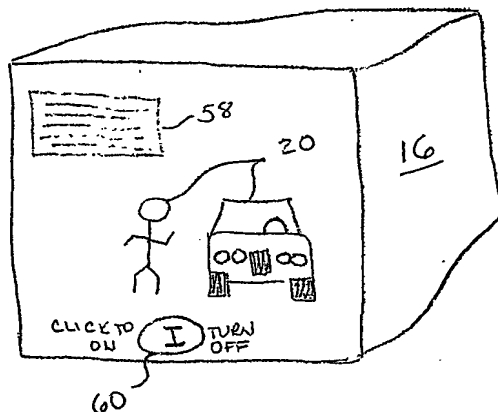


FIG. 4

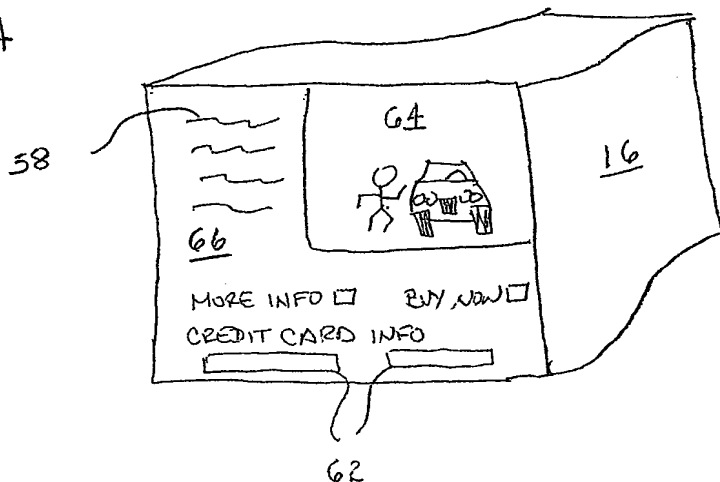
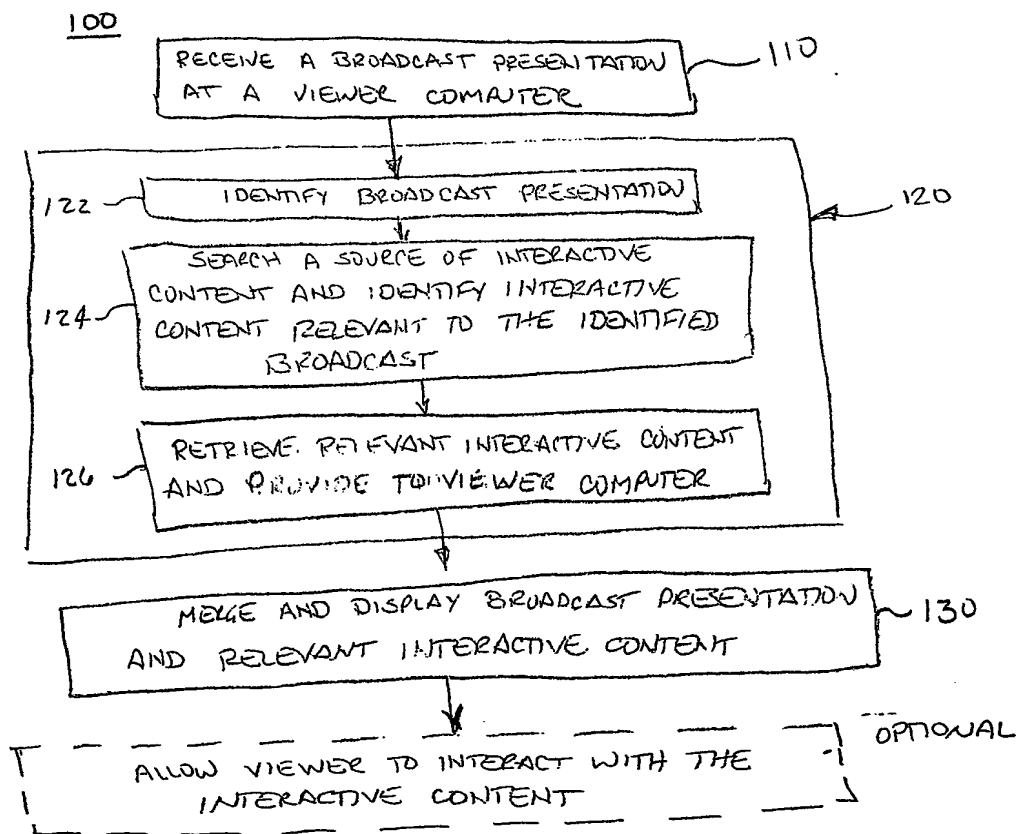


FIG. 5



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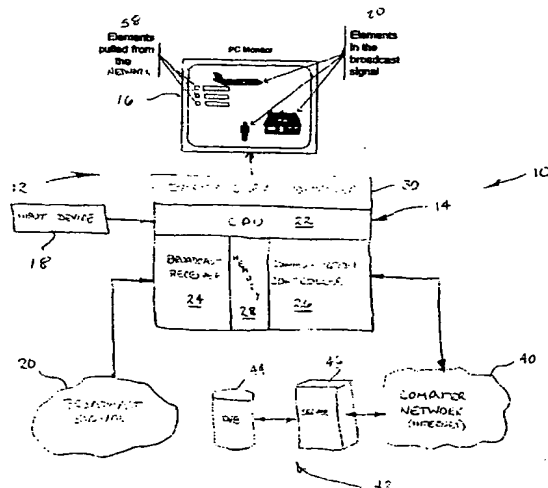
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(54) Title: SYSTEM AND METHOD OF PROVIDING RELEVANT INTERACTIVE CONTENT TO A BROADCAST DISPLAY



(57) Abstract: A system and method (10) of displaying interactive content (58) relevant to a broadcast presentation (20) on a viewer display (16) associated with a viewer device. The method begins with the receipt, at the viewer device (16), of a broadcast presentation from a broadcast presentation provider. Next, the viewer device receives relevant interactive content (58) from a source (44) of interactive content, filtered and characterized for a specific user. This additional content is bound to the broadcast content only by nature of a relevancy mapping. As such, it may be presented to the user without the broadcast content providers direct assistance. The viewer device (16) merges the broadcast presentation (20) and the relevant interactive content (58) and displays both the broadcast presentation and the relevant interactive content on a viewer display (16). Preferably, the viewer device (16) accesses the source (44) of relevant interactive content over a computer network (40), such as the Internet.

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## INTERNATIONAL SEARCH REPORT

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**A. CLASSIFICATION OF SUBJECT MATTER**

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US CL : 725/43, 44, 51, 109, 110, 112

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 725/43, 44, 51, 109, 110, 112

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

East - window, video, url, network, customized, interactive

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,005,565 A (LEGALL et al) 21 December 1999, whole document	1-22
A	US 5,585,866 A (MILLER et al) 17 December 1996, whole document	1-22
A	US 6,034,677 A (NOGUCHI et al) 07 March 2000, whole document	1-22

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

01 JUNE 2002

Date of mailing of the international search report

24 JUN 2002

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
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# PATENT COOPERATION TREATY

C1

From the INTERNATIONAL SEARCHING AUTHORITY

## PCT

### INVITATION TO PAY ADDITIONAL FEES

(PCT Article 17(3)(a) and Rule 40.1)

To:

LAHIVE & COCKFIELD, LLP  
Attn. Lanza, John D.  
28 State Street  
Boston, Massachusetts 02109  
UNITED STATES OF AMERICA

**ENTERED  
DOCKETED**

*Feb 17, 2005 - 1 mo Reminder  
March 17, 2005 - Pay additional fees*

Date of mailing  
(day/month/year)

31/01/2005

Applicant's or agent's file reference

MVT-002PC

**PAYMENT DUE**

within 45 ~~days~~ days  
from the above date of mailing

International application No.

PCT/US2004/025803

International filing date  
(day/month/year)

09/08/2004

Applicant

MAVEN NETWORKS, INC.

1. This International Searching Authority

- (i) considers that there are 3 (number of) inventions claimed in the international application covered by the claims indicated ~~below~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~below~~ on the extra sheet:

- (ii) ☒ has carried out a partial international search (see Annex) ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:

see annex

- (iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid

2. The applicant is hereby **invited**, within the time limit indicated above, to pay the amount indicated below:

EUR 1.550,00 x 2 = EUR 3.100,00  
Fee per additional invention      number of additional inventions      total amount of additional fees

Or, \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

The applicant is informed that, according to Rule 40.2(c), **the payment of any additional fee may be made under protest**, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☐ Claim(s) Nos. \_\_\_\_\_ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
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Authorized officer

Patricia Klingens-Herklots

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# Important Information for Applicants outside Europe

## general

- the **claims cannot be changed** at this point in the procedure, the transmitted report is **not** the ISR (see PCT Art. 19)
- non-payment does not lead to a **loss of rights**, a new procedure will be started on entry into the regional or national phase
- any payments have to be effected **directly** to this ISA (account details below), payments to other entities will not be accepted
- in case of a **total of more than 2 inventions** found: when paying please **specify exactly** which claims should be searched
- an **extension of the set time limit** cannot be granted, as the total number of days **must not exceed 45 days** (PCT Rule 40.3)

## payment by cheque or money transfer:

- the **date of payment** is considered to be the **date the money is booked** in the EPO account
- faxed cheques are not considered to be a valid payment
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## payments under protest according to Rule 40 PCT:

- the protest will **not be accepted without a payment** of additional search fee(s)
- the protest has to be **accompanied by a technical reasoning**
- no **protest fee** needs to be paid yet, only additional **search fee(s)**

## Account Details

Euro accounts of the European Patent Organisation

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Postbank AG  
Bayerstr. 49  
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This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-45

Displaying interactive elements superimposed to the output of a media player.  
---

2. claims: 46-65

Storing in mass storage a file comprising video and a file comprising interactive elements.  
---

3. claims: 66-100

Efficiently downloading a page of broadband content.  
---

The following document is referred to:

D1: WO 02/43310 A (WAVEXPRESS INC) 30 May 2002

This International Search Authority found multiple (groups of) inventions in this international application, as follows:

I. Claims: 1-45

Displaying interactive elements superimposed to the output of a media player.

II. Claims: 46-65

Retrieving and storing in mass storage a file comprising video and a file comprising interactive elements.

III. Claims: 66-100

Efficiently downloading a page of broadband content.

First subject of the application (claims 1-45)  
=====

Claim 1 contains the following technical features:

- First window having a media player;
- Second window having at least one of a plurality of display elements;
- Application program configured to display output of the media player of the first window in a portion of the second window;
- Superimposing, in the portion of the second window, the display of at least one of the plurality of display elements and the display of the output of the media player.

In document D1 (cf. abstract; pg. 1, ln. 25 - pg. 2, ln. 26; pg. 8, ln. 9-31; pg. 9, ln. 26 - pg. 10, ln. 12; fig 1-5) a system that provides the above mentioned technical features is illustrated. Thus, the

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subject-matter of independent claim 1 is known from document D1.

The subject-matter of dependent claims 2-8 and 10-17 add further details known to the system defined in claim 1 and are at least rendered obvious for the skilled person (see International Search Report). Claims 18-31 and 32-45, refer to the method and computer program, respectively, corresponding to the system of claims 1-17.

The special technical feature of the first invention, which makes the contribution over the prior art, is the synchronization of the position of the media player in the first window with the position of the portion of the second window (claim 9).

The above mentioned additional feature provide the synchronization of both the video content and the interactive elements.

#### Remaining subjects of the application

=====

The remaining subjects of the application can be defined as follows:

##### II. Claims: 46-65

Claim 46 comprises a storage device which is also present in the system disclosed in document D1 (see pg. 5, ln. 18-21).

The subject-matter of claim 46 differs from the known system in that it additionally comprises a download manager retrieving and storing a first file comprising video content and a second file comprising interactive elements.

Said additional feature allows for the local storage of the complete video and interactive elements files.

The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent method claim 55 and to the corresponding independent program claim 62.

##### III. Claims: 66-100

Claim 66 comprises a storage device which is also present in the system disclosed in document D1 (see pg. 5, ln. 18-21).

The subject-matter of claim 66 differs from the known system in that it additionally comprises a bandwidth measurement device for determining the bandwidth of a network connection over which the content file is downloaded and a download manager for retrieving and storing a portion of the content file responsive to the determination made by the bandwidth manager.

Said additional features allow for the local storage of a portion of the content file responsive to the determination made by the bandwidth manager.

The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent method claim 75 and to the corresponding independent program claim 83. And also to the subject-matter of independent claims 84, 93, and 100.

#### Conclusions with respect to unity of invention

=====

The additional features of these groups of claims differs from that of the features of the others without there being any unifying concept common to all. Consequently, the requisite unity of the invention no

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longer exists (Rule 13.1 PCT), since the claims 1 to 100 are no longer linked by a common special technical feature as required by Rule 13.2 PCT. Therefore, the International Search Authority is of the opinion that three different inventions are claimed in the present application.

#### Further non-unity

=====

The application relates to a plurality of inventions, or groups of inventions, in the sense of Rule 13.1 PCT. They have been divided as defined above. If the applicant pays additional fees for one (or more) not yet searched group(s) of invention(s), then the further search(es) may reveal further prior art that gives evidence of a further lack of unity 'a posteriori' within one (or more) of the not yet searched group(s). In such a case only the first invention in this (each of these) group(s) of inventions, which is considered to lack unity of invention, will be the subject of a search. No further invitation to pay further additional fees will be issued. This is because Article 17(3)(a) PCT stipulates that the ISA shall establish the International Search Report on those parts of the international application which relate to the invention first mentioned in the claims ('main invention') and for those parts which relate to inventions in respect of which the additional fees were paid. Neither the PCT nor the PCT guidelines provide a legal basis for further invitations to pay further additional search fees (W17/00, point 11 and W1/97, points 11-16).

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**Annex Form PCT/ISA/206  
COMMUNICATION RELATING TO THE RESULTS  
OF THE PARTIAL INTERNATIONAL SEARCH**

International Application No  
**PCT/US2004/025803**

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
- see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/43310 A (WAVEXPRESS INC) 30 May 2002 (2002-05-30) abstract page 1, line 25 - page 2, line 26 page 8, line 9 - line 31 page 9, line 26 - page 10, line 12 figures 1-5 claims 1,10	1-45
A	US 2001/027475 A1 (LAHAVE YAIR ET AL) 4 October 2001 (2001-10-04) paragraphs '0021! - '0023! paragraph '0035! figures 1A,1B	1-45
A	US 2002/171760 A1 (DYER THOMAS CHRISTOPHER) 21 November 2002 (2002-11-21) abstract paragraph '0005! - paragraph '0008! paragraph '0032! - paragraph '0034! figures 2,5,6	1-45
A	EP 0 840 276 A (TEXAS INSTRUMENTS INC) 6 May 1998 (1998-05-06) abstract page 2, line 18 - line 25 figures 1,3,4,6	1-45

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

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- \*G\* document member of the same patent family

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**Patent Family Annex**  
Information on patent family members

International Application No  
**PCT/US2004/025803**

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 0243310	A	30-05-2002	AU	3980802 A	03-06-2002
			CA	2426941 A1	30-05-2002
			EP	1336295 A2	20-08-2003
			US	2002087974 A1	04-07-2002
			WO	0243310 A2	30-05-2002
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US 2001027475	A1	04-10-2001	AU	4729101 A	24-09-2001
			WO	0169927 A2	20-09-2001
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US 2002171760	A1	21-11-2002	NONE		
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EP 0840276	A	06-05-1998	DE	69716376 D1	21-11-2002
			DE	69716376 T2	05-06-2003
			EP	0840276 A2	06-05-1998
			JP	10187126 A	14-07-1998
			US	6263396 B1	17-07-2001
			US	6452641 B1	17-09-2002
			US	6310657 B1	30-10-2001
			US	6369855 B1	09-04-2002
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